Come Into the Country—Build a Charming Home Like This

Builders Estimate Costs Closer Than Public Thinks

Something Wrong When Bids Vary Widely; in Such Cases Extreme Prices Represent Inaccuracy or Inexperience; Labor Big Item in Construction

By Harlow Lewis
Of Tucker & Lewis

The question of construction costs is of such vital importance to an owner that a discussion in detail of the various items which enter into the contractor's estimate may be of value. I have chosen for this purpose an actual estimate prepared on a house similar in all respects to those being illustrated in The Tribune, so far as quality of workmanship and finish are concerned. This house is to be built in New Rochelle. The exterior is of stucco on bishopric board and the roof of cypress shingles. The house contains a laundry in the basement, and a combination living room and dining room with kitchen, pantry, etc., on the first floor, three bedrooms and a bathroom on the second floor, and an unfinished attic. The actual contractor's estimate of cost is given below:

	Labor cost.	Material cost.
Masonry work:		
Excavation and backfill	$428	
Concrete foundation walls and miscellaneous concrete work	599	$699
Brick chimney	239	196
Brick fireplaces, porch floors, etc.	126	95
Carpentry work:		
Framing and underflooring	893	574
Shingles and shingle lath	170	158
Finished floors	223	227
Labor on finished millwork and trim	807	
Total	$3,663	$1,949
Insurance	266	
Total	$3,928	
Material	1,949	
		$5,877
Sub-contracts:		
Millwork, frames, sash, doors, trim, etc.	$1,188	
Painting	637	
Finished hardware	200	
Plastering and stucco work	1,250	
Plumbing	883	
Heating	800	
Electric work	233	
		$5,193
Total		$9,980
Profit, 10 per cent		998
Bid price		$10,978

It will be seen that this estimate is divided into three main headings, namely: Labor, material, sub-contract work. The items "labor" and "material" cover work which is ordinarily done by the general contractor on any house job, namely, masonry and carpentry work. Most general contractors execute these two branches of the work with their own forces. Some few do only masonry work, and sub-contract the carpentry work, or do only the carpentry work and sub-contract the masonry work. Very few find it to their advantage to do more of the work themselves. The reason for this is obvious. Such work as painting, plastering, plumbing, heating and electric wiring is in the nature of a specialty and requires especially skilled mechanics to handle it. The practice has therefore grown to entrust all of this class of work to contractors who specialize in these lines.

How Work is Divided

It will be seen from a study of the figures given that approximately 50 per cent of the work involved in this particular house consists of masonry and carpentry which the builder does with his own forces, and 50 per cent of sub-contract work which is done for him by others. A further study of these figures will give some interesting information as to legitimate variations in bids which may be received on the same house.

Let us assume that the figures given represent an accurate estimate of the quantity of work to be done, and the lowest possible prices which could be put on each unit so far as labor is concerned, and let us suppose that several contractors are bidding on the job. What is the greatest possible legitimate variation in their bids?

At any given moment, around New York, the material market is constant; that is to say, any one of the half dozen contractors supposed to be bidding on this particular job can buy the brick, cement, lumber, etc., at the same price. If the estimated quantities are correct, there is practically no chance for a variation in the item of $1,949 given as the cost of the carpenter's and mason's materials.

Estimates Do Not Vary Much

The actual labor cost of doing work in house construction is much more nearly constant than most people think. In other words, in the case of a half dozen competent builders having approximately 5,000 brick to lay in a given place, it is not conceivable that any one of them could lay these brick at a saving of more than 10 per cent over any other, and this 10 per cent would be an extreme variation. The same thing is true of the cost of framing lumber, putting on shingles, etc.

Suppose we assume a 10 per cent variation in the labor cost as the maximum between any one of the several bidders. That would mean that the high bidder's estimate for his labor item would be increased by $266. There remains only to be considered the sub-contract accounts.

In preparing estimates for work of this sort, each general contractor gets competitive bids on the sub-contract work involved before making up his own figures. The result is that there is a much smaller chance of variation in this item as between any one of the half dozen bidders than in any other item of cost. A 5 per cent variation in the bids received by all of the general contractors figuring would probably be excessive. For the sake of argument, however, let us assume that the unfortunate high bidder also had his sub-contract account increased by 10 per cent, or $510. This would represent a total increase on his estimated net cost of $776, and if he is working on a 10 per cent basis of profit his bid would be increased to the owner by $852, or about 7¾ per cent of the low bid.

Beware of Extreme Low Bidder

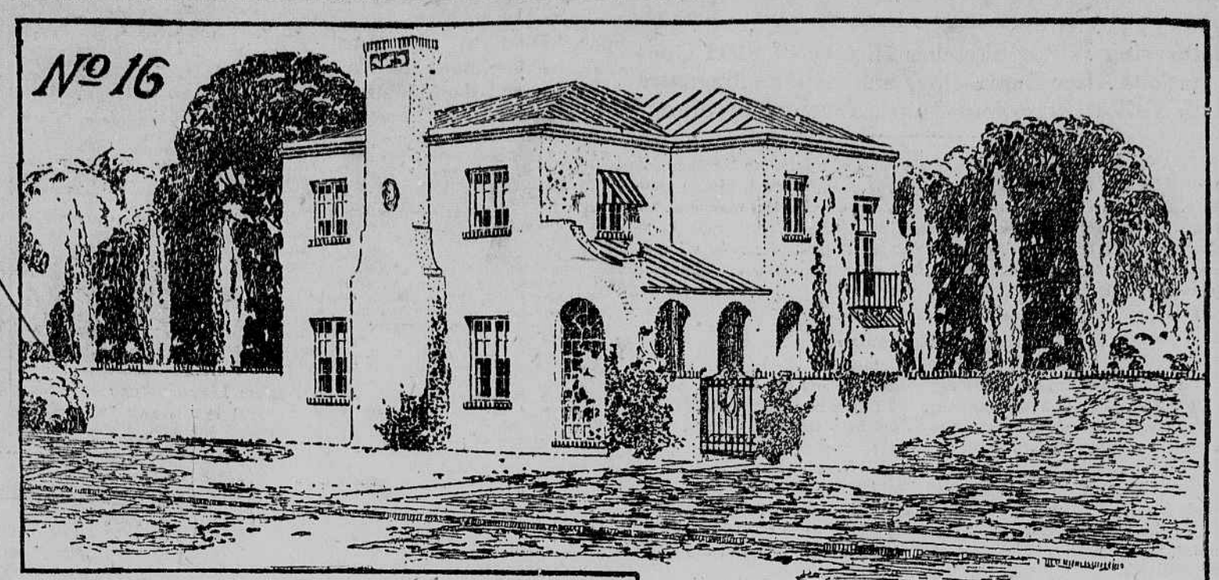
This represents about the extreme legitimate range that should be encountered in bids on this class of work. Any greater variations should be immediately suspected to be due to one of three reasons—first, an error in estimating quantities from the plant; second, a variation from the specifications so far as quality of material or workmanship are concerned; third, lack of accurate knowledge due to inexperience in handling the class of work involved.

Any one of these three causes spells trouble for the owner, and before permitting a contract to be closed with an extremely low bidder he should satisfy himself that the mistakes, if any, have been made by the high bidders on his job and not by the one low bidder. The chances are that his investigation of any very low bid before the contract is let will prove that something is unbalanced somewhere.

Home Buying in Flushing And Sites for Houses Bought

P. J. Walsh sold his home at 63 North Twenty-third Street, 80x100, Broadway-Flushing, to Charles F. Pearson, through J. Albert Johntra, who also sold to Hugh Cromley the northerly part of the Fisher homestead property at State and Lincoln avenues, 125x125. There are a garage and dwelling and several outbuildings on the property.

Mr. Johntra also sold for Steven R. Warner, a plot, 50x100, on the east side of Twenty-fifth Street, Flushing, to Frank M. Hummard, of Yonkers, who intends to erect a dwelling.



Cost of Construction, $15,500

SMITH & LEO and TUCKER & LEWIS certify to The New York Tribune that this dwelling can be erected according to architect's plans and specifications within twenty-five miles of New York for the sum of.....$15,500
Architect's fee for plans, specifications, details and supervision is 6 per cent of actual cost $930

Architect's Specifications

Masonry—All excavation, backfill and rough grading as required. Foundation footings and walls to be of stone or gravel concrete. Cellar and porch bottoms of 8-inch cinder concrete and 1-inch cement. Porch finish to be lined off and colored as directed. Chimney of common brick, with T. C. flue linings. Fireplace facings face brick as selected, and exterior walls 8-inch terra cotta hollow tile, all to be laid up in cement mortar.

Ironwork—To include Lally columns, clean-out doors, ash dumps, dampers, stirrups, etc.

Lath and Plaster—Exterior to be stuccoed with cement plaster applied in 3 coats; finish to be as directed. Exterior tile walls to be furred on inside with 1x2 furring strips. Interior walls and ceilings throughout to be lathed with spruce lath; to receive 3 coats of plaster, including a hard white finish, except walls of bathrooms to 4-foot height, which shall be of metal lath to receive tile.

Carpentry—All framing timbers, such as beams, rafters, studs, etc., shall be of spruce; girders, L. L. Y. P.; all sizes as indicated on working drawings. Interior millwork to be of white wood or gum, for painting. Exterior doors, cypress, to be painted white; interior doors, stair treads and rails to be birch, mahogany finish. Finished floor, ⅞x2¼ comb grained pine.

Sheet Metal—Roofs to be covered with best quality roof tin, painted 3 coats of metallic paint. Leaders and gutters galvanized iron, sizes as shown.

Plumbing—Fixtures of modern design, vitreous china and enameled iron. All exposed work in bathrooms to be nickel plated on brass. Soil and vents extra heavy cast iron; water supply lines galvanized wrought iron. House sewer to run 5 feet outside building.

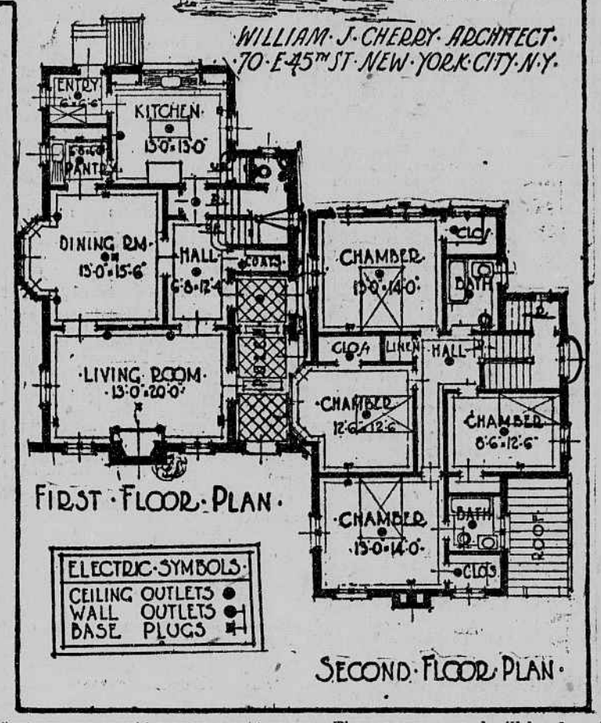
Heating—Heating system to be single pipe steam, with sectional boiler. All lines to be covered with asbestos cell covering. Low radiators with improved air valves and system to have a heat regulator controlled electrically by 5-day clock.

Electricity—The electrical system to be started from outside of building with proper cutouts, etc. All wiring to be B. X. cable to each outlet, with single and 3-way switches as indicated on working drawings.

Painting—Exterior trim and metal work to be painted three coats of lead and oil. Interior millwork three coats of lead and oil or an approved prepared paint. Doors, stairs and rail to be given one coat of mahogany stain and one coat oil. Floors to be filled, stained and varnished or waxed as directed.

NOTE—The above specifications contemplate use of the following materials: For all cement or concrete, Pennsylvania Portland cement; for all painting, exterior and interior, National white lead; for mantels, Arthur Todhunter's products, estimate of cost, $200; for plumbing fixtures, J. D. Johnson & Co.'s materials, estimate of cost, $465; for lavatories, closets, bath tubs, kitchen sinks, drain boards and wash trays; for heating, Richardson & Boynton boiler. American Radiator Company, radiators. Minneapolis Heat Regulator Company, heat regulator, estimate $160; interior and exterior trim, Curtis Companies.

The following items are not included in the architect's construction specifications and should receive consideration. The concerns named will be pleased to supply all details and costs: Electrical appliances, Appliance Distributing Corporation; financing, the Franklin Society; garbage receiver, the Majestic Company; insurance, Richard L. Wood & Co.; landcape, Pentecost & Martin; lighting fixtures, Dale Lighting Fixture Company, estimate $325; sewage disposal, the Kaustine Company, estimate $282. Water supply, screens and weather strips, shades and awnings and coal range.



'Steel Lumber' Now Being Made For Use in Small Homes

Steel Industry Has Perfected Product That Makes House Construction Fireproof and Ageproof at Comparatively Low Cost; Popular in West

By Ralph G. Beyer
Manager National Bridge Works

Harlow Lewis's article, "Safeguard Investment and Life by Building Right," in a recent issue of the Tribune, was very interesting and should be given every consideration in the building of a home. Fireproofing is seldom considered in suburban home construction, because of the excessive costs involved in concrete floor systems, which in the past has been the only construction considered fireproof. Naturally wood was resorted to as the only possible means of construction within reasonable cost. The owner, realizing that fire could destroy his home, secured fire protection in the line of insurance, which would compensate him for the cost of his building should it be destroyed by fire, but about the lives of his dear ones and those life collected treasures that money could never replace—well, he would be very careful to see that no such fire ever occurred in his home.

Statistics of the United States Geological Survey show that 74 per cent of all fires originate on the inside of buildings, and that the causes are overheated furnaces, hot ashes, water heaters, leaky gas pipes and meters, electrical and other equipment, which must be located below the first floor. With the present building shortage, in addition to the number of homes and buildings which are being destroyed each year by fire and other causes, it is almost impossible to state when construction will catch up with the demand.

Wood Should Now Be Used

Building with wood is causing one of the most serious conditions which confront us to-day—our forests are becoming depleted, our source of supply is getting further and further away from railroads and economical points of shipment, and it is becoming our duty today to build economically with some type of construction which will be permanent, and at the same time offset the biggest enemy to the home, which is fire. The steel industry has developed steel lumber joists, a product which will overcome these difficulties and will meet all requirements.

"Steel lumber" is a light rolled steel section manufactured from plates and flanged into channel sections, and placed back to back and spot welded, forming a joist section entirely of steel, which is similar in appearance to the I-beam steel section. It is absolutely fireproof, light, easy to erect, durable and has sufficient strength to carry the superimposed loads. It is adaptable to specific purposes and its construction is not dependent upon the personal equation of workmen for safety. It is easy to handle and requires no experienced labor to install. It is cut to length at the mill or shops and delivered to the building ready for installation. A layer of expanded wire lath is placed upon the top of these joists, screed strips are nailed to the top of joists, a 2-inch fill of concrete is then poured on the top layer of lath to the height of the screed strips and then the finished floor is applied.

Fireproof Floor Urged

Where a ceiling is required, expanded metal lath is fastened to the underside of joists with a steel spring clip, and then the desired finish of concrete or plaster is applied—the result is a light-weight fireproof floor, which has stood up under a fire test of 1,700 degrees Fahr. for four hours under full load without twisting or bending. The dead load of this construction weighs forty pounds a square foot, which is less than half that of any type of fireproof construction. It eliminates shrinkage, is sound-proof, dust-proof, vermin-proof, all the merits of which are very essential in suburban or other types of structures.

Over thirty million square feet of steel lumber floor area have been installed throughout the country.

We who are familiar with the building conditions in our Western cities with reference to the ready-cut wooden house, a system adopted in the West years ago and which is just being taken advantage of in the East, must admit that our Western neighbors are far more progressive in building economy than we have been in the East. To meet the growing demand which has been created for this steel product in the East, fabricators are carrying it in stock so as to enable buildings to be erected promptly, which is another great step toward economy.

Henry Ungrich Estate in White Plains Sold to Siegfried Gabel

Edward M. West, Inc., sold for the Henry Ungrich estate property in Prospect Park, White Plains, to Siegfried Gabel, held at $45,000; for Lewis B. Newell his English stucco, half timber house at 184 Post Road to Milton Proctor, recently appointed principal of the new Marmaroneck Avenue School. Mr. Proctor in turn sold his home at Hastings-on-Hudson.

Mr. West also sold for Mrs. Carrie Heermans, of Corning a plot in Prospect Park to the H. M. Building and Realty Corporation, and for the White Plains Housing Corporation to C. H. Maudsley a plot in the Anderson Park district to be improved.

Staten Island Buyer to Build

Cornelius G. Kolff sold for the estate of Henry P. Morrison four vacant lots on the southeast corner of Bement and Forest avenues, West New Brighton, S. I., to Gray B. Sullivan, who plans to erect a private dwelling.

Get Houses in Yonkers

Thomas S. Burke sold to John Grant Daley the residence, 140 Gilbert Place, Yonkers, and leased for Mrs. Dorothea Senior the dwelling 52 Arthur Street to Mrs. Marion Fish.

Design, Quality and Finish of Wood Trim Very Often The Something That Makes the Country Home Delightful

By H. H. Hobart
Of the Curtis Companies, Inc.

As the building that is to be your home soon begins to take shape under the magical guidance of the builder and architect, one thought will constantly come to you. And when you walk through the finished but yet vacant structure that thought will come back as an established fact—the woodwork in the home is what makes it homelike.

You realize the importance of sanitary plumbing and of a satisfactory heating system in making your house comfortable and healthful, but your eyes are attracted and your heart is warmed by the liveableness that only woodwork can contribute.

Of course, it has to be good woodwork. Cheap, poorly constructed, poorly finished material, glaring and gaudy in color and form, heavy and atrocious in design, does not produce the atmosphere of an inviting haven. The very fact that it does not proves the importance of having the woodwork right from the start.

It is, of course, very easy to say that—just as easy as it is to recognize the common sense of the statement. The problem is, how can you get that kind of woodwork?

Only Two Choices in Trim

Heretofore there have been only two courses open to the home builder for procuring woodwork. He could have his architect design for him trim, moldings, doors, "architect's furniture," stairs, exterior moldings, shutters, entrances and porchwork suitable in character for his particular home. He could then have the architect "detail" these items, to be made especially at the mill.

Did you ever visit the busy office of an architect? Have you ever surveyed with puzzled bewilderment the incomprehensible maze of lines and symbols and foreign—to the unarchitectural—words which your architect calls a "detail"?

If you have, you begin to understand why specially detailed designs cost real money. Then if you have gone through a woodworking factory, with its electrically driven machines, complex and exceedingly accurate, which must be adjusted for every little detail, you will know why made-to-order woodwork has a made-to-order price.

The second course open to the home-builder was to take the millwork catalogue of any reputable manufacturer and select from its pages "stock" items that would "do." The construction of these items was very likely to be good, but good designs were absolutely unobtainable. While commonly called "stock," most of the items pictured in the books were articles that had been made up to special order for some customers at some time and which would have to be made up specially again when your order came in. The design was wholly dependent upon the knowledge—or, more likely, ignorance—of correct design possessed by the original owner, or contractor, or carpenter, who first conceived the idea for that bit of woodwork.

Mr. Homebuilder, therefore, has had to decide whether he would have well designed woodwork made to order at great expense or "stock millwork" of no architectural merit, at a cost within his means. Not much choice for Mr. Homebuilder!

Big Change in Last Two Years

Within the last two years a long forward step has bene taken by woodwork manufacturers toward solving this dilemma by making good design an attribute of a standardized stock product. The word "standardized" has taken on a new meaning in this connection. It does not merely mean standarized as to quality, as heretofore, but standardized as to production also—in size, material and design.

The Curtis Companies, Inc., which have been producing quality woodwork for more than a half century, were led by a series of different circumstances to the conclusion that there was a demand among people of good taste but of only average means for good woodwork of architectural quality, yet moderate price. This, briefly, is how they worked out that problem:

Three years were spent in close collaboration with Trowbridge & Ackerman, architects, of this city, whose ability in the field of small-house architecture has won recognition for them on both sides of the water. With the practical knowledge of machine-possibilities possessed by the manufacturers on one side and the knowledge of good design possessed by the architects on the other, a line of architecturally correct woodwork was developed that could be produced in quantities, thus combining in one product economical cost and architectural character suitable for any house of refinement, large or small. That result goes a long way toward answering the question, How can you get that kind of woodwork?

It was necessary for the manufacturers to restrict the number of different items to be made so that the idea of producing stock quantities would be practicable, for upon production in quantities depends the reasonable cost of the product as well as the profitableness of the venture for the factory. The number of items could be reduced in two ways—by elimination of unnecessary sizes and by limiting the number of designs.

Elimination of sizes was not difficult, because it developed, from the records of previous sales, that 90 per cent of the demand was really confined to approximately one-third of the sizes of the various items, anyway. Roughly, then, two-thirds of each list of sizes could be dispensed with without inconveniencing the builder.

Four Types of Architecture

The matter of design was the next problem, and a hard one. Woodwork had up to this time been far behind both houses and movable furniture in the tendency toward "period" development. In fact, so-called "stock" woodwork had fallen into disrepute among architects of standing because of its unsuitability in well designed houses which were to have such period furnishing. A detailed study of architectural types for small American homes, however, led to the conclusion that practically every well designed small home is in one of four types—Colonial, English, Southern or Western. A complete line of woodwork, with ample room for choice, was developed for each of these types.

Needless to say, the idiosyncrasies of every taste cannot be satisfied by any standardized product.

Standardization, however, does bring within the reach of people of good taste but moderate means woodwork of real merit of design and an expert construction that is possible only when quantities are produced. To obtain these qualties bizarre notions may well be sacrificed by the home builder.

Gain to Home Builder

Because such standardized woodwork, being made in quantities, may be identically like that of one's neighbor is no drawback, for the finishing of the different woods provides unequaled opportunities for the expression of each family's individuality.

It pays to put in your home standardized woodwork, not only because it is better designed, reasonable in cost, quick of delivery and better built, but because such woodwork represents an average—what American home builders as a class like. After all, popular approval, averaged over a period of time, is good taste. Whatever has good taste fundamentally will always be in good taste.

Manhattan Contractor Buys Fine Home in Pelham Manor

Prince & Ripley sold for J. N. Carpenter his Colonial home on Williard Avenue, Pelham Manor, formerly owned by Dario Resta, to Joseph J. B. Lamarsh, a contractor of this city, held at $25,000. The same brokers sold for Henry Garrity his Colonial house at 38 Ridgeview Avenue, White Plains, to W. W. Griffith, of Scarsdale, held at $25,000.

Sale in Upper Montclair

The Frank Hughes Company sold for Mrs. Adelaide C. Mace to Edward M. Butler, 334 Highland Avenue, Upper Montclair, 150x150, held at $18,000.